

AMSAT News Service Weekly Bulletins

Issue: ANS-098 SPECIAL

Date: 2011-04-08

Sources: amsat-ans-2011-ans-098-special-hyperkitty-34f6d94c0e.txt

SB SAT @ AMSAT \$ANS-098.01

ANS Special Bulletin ARISSat-1 Activation Aboard ISS Begins April 11

AMSAT News Service Bulletin 098.01

>From AMSAT HQ SILVER SPRING, MD.

April 8, 2011

To All RADIO AMATEURS

BID: \$ANS-098.01

SILVER SPRING, MARYLAND (AMSAT News Service) While awaiting deployment from the International Space Station (ISS) in late July, an amateur radio satellite specifically designed to interest students in scientific and technological careers will be activated and begin transmissions from the ISS in mid-April of this year.

Transmissions are scheduled to begin Monday around 14:30 UTC April 11 and ending Wednesday around 10:30 UTC on April 13. Electronic certificates of the event will be available to those submitting reception reports to: Gagarin(a)arissatl.org.

These transmissions will commemorate 50 years since the flight of Russian Cosmonaut Yuri Gagarin as the first human to enter outer space. The satellite (called ARISSat-1, RadioSkaf-V) will send telemetry, SSTV images, and messages of goodwill as it orbits earth inside the ISS.

ARISSat-1 is a cooperative effort between AMSAT, ARISS (Amateur Radio on the International Space Station,) RSC-Energia (The Russian Space Agency) and NASA. The design, development and construction of the satellite was done by AMSAT volunteers. Original plans called for the satellite to be housed inside an old Russian spacesuit. But when the suit became unavailable, a spaceframe was developed to house the radio equipment and solar panels. The new satellite was named ARISSat-1. Other names for the spacecraft are RadioSkaf-V and Kedr. The transmitted callsign will be RS01S.

In order to operate inside the ISS, ARISSat-1 will be connected to an external amateur radio antenna already mounted on the outer surface of the space station. The craft will use its own battery for operation, therefore it will be in low power mode. As a result, listeners can expect 40-60 second "ON" periods followed by two-minute "OFF" periods to save battery power.

To listen for ARISSat-1 voice signals during this special event, FM receivers should be tuned to 145.950 MHz. Specific only to this event, planning is currently underway to provide an additional FM broadcast downlink at 437.550 MHz. Even though the satellite will only have an output of 250 mW on 2 meters, a standard FM handy talkie equipped with a quarter-wave whip antenna should be able to receive the voice ID, voice telemetry and greeting messages as the craft passes overhead. SSTV transmissions may also be demodulated and viewed using a free downloadable program such as MMSSTV that is available at: <http://mmhamsoft.amateur-radio.ca/pages/mmsstv.php>. For Mac users, Multiscan2 is available at: <http://web.me.com/kd6cji/MacSSTV/MultiScan.html>.

Those planning to monitor voice broadcasts from ARISSat-1 are request-

ed to make note of the telemetry battery voltage values and UTC time, and then submit their records to [Gagarin\(a\)arissatl.org](mailto:Gagarin(a)arissatl.org). Digital telemetry will be sent at 145.920 MHz. Given the low duty cycle of the spacecraft, those planning to receive the digital telemetry are encouraged to record the entire signal band using the FunCube dongle or SDR-IQ receivers.

Software for demodulating the BPSK-1000 telemetry is available at:
http://www.arissattlm.org/download/ARISSatTLM_050_Setup.exe
A software user guide will be available soon.

This special period of operation is only expected to continue during the two-day 50 year commemoration of Gagarin's famous mission.

The actual deployment of ARISSat-1, first announced for February 2011, is now expected to take place during an EVA scheduled for late July, 2011. After it is deployed from the International Space Station, ARISSat-1 is expected to be in orbit for a period of up to six months.

More information on the transmission schedule and overall mission of ARISSat-1 can be found at:

ARISSat-1 Web site: <http://www.arissatl.org>

AMSAT Web site: <http://www.amsat.org>

ARISS Web site: <http://www.ariss.org>

ARISS Facebook Page: Amateur Radio on the ISS (ARISS)

ARISS Twitter site: @ARISS_status

The Radio Amateur Satellite Corporation (AMSAT) is a non-profit, volunteer organization which designs, builds and operates experimental amateur radio satellites and promotes space education. We work in partnership with government, industry, educational institutions and fellow amateur radio societies. We encourage technical and scientific innovation, and promote the training and development of skilled satellite and ground system designers and operators. Our vision is to deploy satellite systems with the goal of providing wide area and continuous coverage for amateur radio operators worldwide. AMSAT is also an active participant in human space missions and supports satellites developed in cooperation with the educational community and other amateur satellite groups.

Amateur Radio on the International Space Station (ARISS) is a volunteer program which inspires students, worldwide, to pursue careers in science, technology, engineering and math through amateur radio communications opportunities with the International Space Station on-orbit crew. Students learn about life on board the ISS and explore Earth from space through science and math activities. ARISS provides opportunities for the school community (students, teachers, families and local residents) to become more aware of the substantial benefits of human space flight and the exploration and discovery that occur on space flight journeys along with learning about technology and amateur radio.

[ANS thanks the ARISSat-1 Team for the above information]

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